

## Influenza vaccination coverage estimates among pregnant women - United States, November 2010

The American College of Obstetricians and Gynecologists and the Advisory Committee on Immunization Practices recommend that all women if pregnant during the influenza season (August through March) be vaccinated for influenza to be protected from severe disease associated with influenza infection in this population.<sup>(1, 2)</sup> Before this past pandemic season of 2009-10, influenza vaccination coverage levels among pregnant women had consistently been low (~15%) compared to levels among other recommended risk groups (30%-70%).<sup>(3)</sup> Interim results of the Behavioral Risk Factor Surveillance System (BRFSS) showed that the monovalent 2009 H1N1 vaccination coverage estimate among pregnant women in the United States was 38% by the end of December 2009.<sup>(4)</sup> Data from 10 states collected by the Pregnancy Risk Assessment and Monitoring Systems (PRAMS) showed 2009-10 trivalent seasonal coverage ranged from 37% to 68% (state median was 51%).<sup>(5)</sup> For the 2010-11 influenza season, the Centers for Disease Control and Prevention (CDC) conducted an internet panel survey during November 11-22, 2010 to provide mid-season estimates of influenza vaccination coverage and in-depth information on knowledge, attitudes, and behaviors related to influenza vaccination among pregnant women for potential mid-season related-interventions. A follow-up survey will be administered in April 2011. This report summarizes some of the key findings from this first survey.

### Key findings

- By mid-November 2010, among women 18 years or over that were pregnant for at least part of the time since August 2010, 44.8% (95% confidence interval [CI] half-width  $\pm 3.0$ ), had already received influenza vaccination. ([Table 1](#))
- Overall, 49.3%  $\pm 3.0$  of pregnant women have been or definitely intend to be vaccinated for this influenza season. ([Table 1](#))
- A lower proportion of pregnant women younger than 25 years were vaccinated compared to those 25 years or above. ([Table 1](#))
- The most common place of vaccination for pregnant women was a doctor's office (57.3%). About two-thirds of these offices were their obstetrician's office, followed by pharmacy or drug store (11.8%), work place (7.5%), and hospital (7.1%). ([Figure 1](#))
- Concerns about vaccination safety risk were the most common reasons unvaccinated pregnant women were not vaccinated: 56.8%  $\pm 3.9$  because of "I am concerned about possible safety risks to myself if I got vaccinated;" 53.7%  $\pm 3.9$  because of "I am concerned that the vaccination would give me the flu;" 48.6%  $\pm 3.9$  because of "I am concerned about possible safety risks to my baby if I got vaccinated." Other common reasons were: 1) "I think if I get the flu, I will just get some medication to treat it;" 2) "I do not think the vaccination is effective in preventing the flu;" and 3) "I do not think I would get very sick if I got flu." ([Figure 2](#))

**Table1. Influenza vaccination coverage and intent to receive influenza vaccination among pregnant women, United States, November 2010**

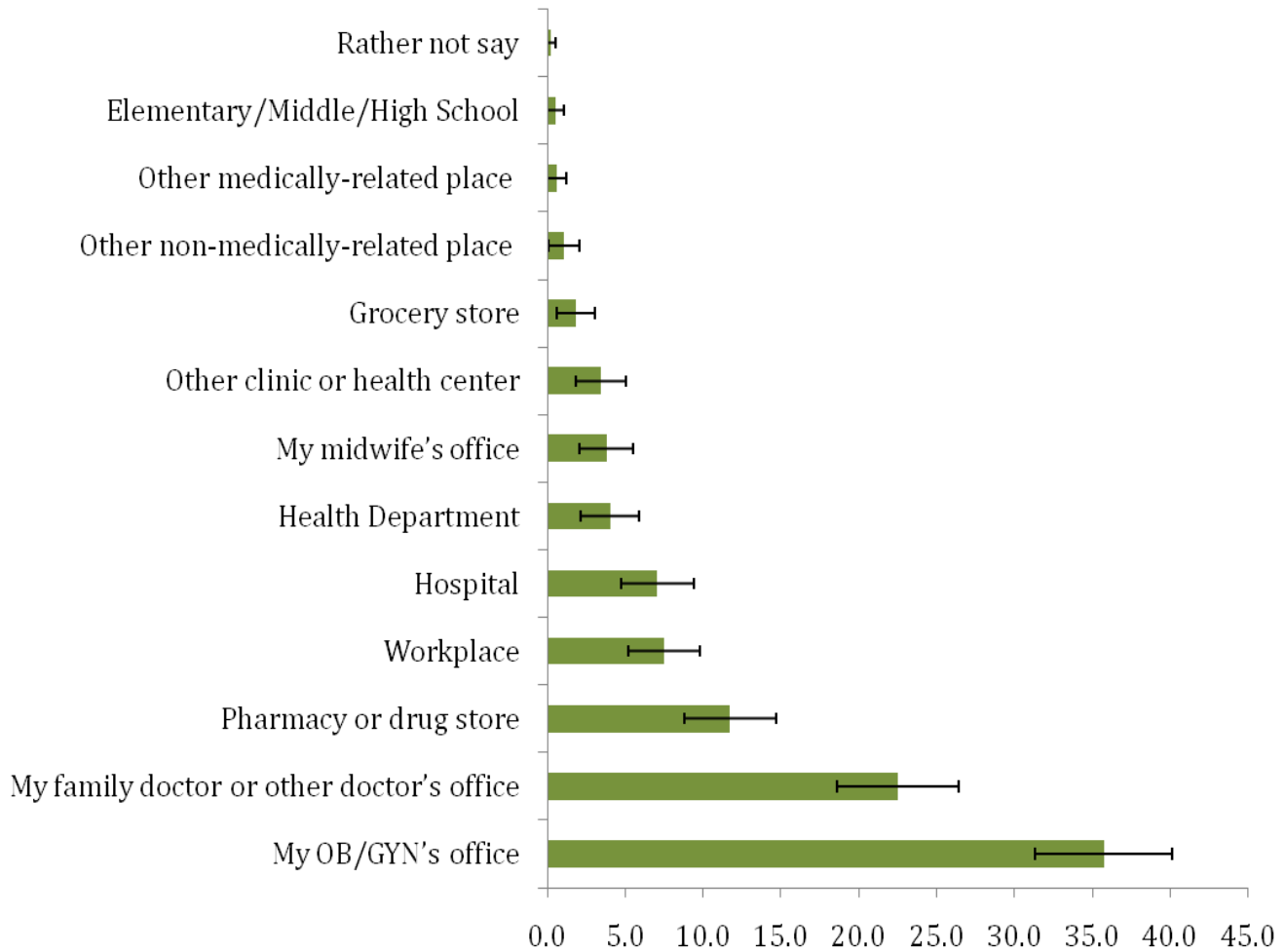
	<b>Un-weighted sample size</b>	<b>Coverage % (95% CI)*</b>
<b>Overall</b>	1,396	44.8 ±3.0
<b>By age group:</b>		
18-20 years	141	35.1 ±9.0
21-24 years	279	38.1 ±6.6
25-29 years	465	48.9 ±5.1
30-34 years	314	50.1 ±6.1
35-39 years	129	46.2 ±9.7
40-44 years	51	52.0 ±15.1 <sup>†</sup>
≥45 years	17	-- <sup>‡</sup>
<b>Already vaccinated or definitely intend to be vaccinated</b>	1,396	49.3 ±3.0

\*Percentages are weighted to the U.S. pregnant women population in 2010 which was estimated based on an update of the report with the estimated number of pregnant women in the U.S. from 1995 to 2005 published by the National Center for Health Statistics (NCHS) in October 2009.<sup>(7)</sup> The 95% CI is shown as ± the half-width of the confidence interval.

<sup>†</sup>Estimate may not be reliable, confidence interval half-width >10.0.

<sup>‡</sup>Estimate suppressed because sample size is less than 30.

**Figure 1. Percent of pregnant women receiving vaccination by place where vaccination occurred, based on an internet panel survey completed November 11-22, 2010, United States, n=597**



**Figure 2: Reasons that pregnant women didn't get influenza vaccination among those unvaccinated by November 11, 2010, Internet panel survey, 2010-11 season**



## Summary and public health implications

Influenza vaccination of pregnant women increased from historically low levels of approximately 15% to a higher level of 51% during the 2009-10 season.<sup>(5)</sup> Results from this internet panel survey indicate that the coverage level is higher than historical low levels, but is below 2009-10 levels and substantially below the Healthy People 2020 objective of 80% for this group.<sup>(6)</sup> Influenza vaccines are safe and effective for pregnant women and their infants.<sup>(2)</sup> Their providers, especially obstetricians, are encouraged to continue vaccination efforts through February or March to prevent influenza throughout the season. Influenza vaccinations for pregnant women should continue to be offered in many locations including primarily in the obstetricians' offices, but also in family and other doctor's offices, clinics, health departments, pharmacies and college health centers, as well as by many employers, and in other school-located vaccination programs.

These efforts will continue to pay off with increased prevention of substantial morbidity and death across the United States.

Mid-season estimates of influenza vaccination coverage, such as those from this report, can be of use to national, state and local immunization program managers, immunization and infectious disease and other state epidemiologists, public health authorities, and medical practitioners. These data can help immunization programs understand how their messages are differentially reaching their populations of interest. Immunization programs can use these data to help shape mid-season communication messages and identify target populations in need of additional outreach and education. The follow-up survey in April 2011 will allow for assessment of the impact of providing mid-season influenza vaccination coverage and related results.

## Data source and methods

The target population for this survey was all women 18 years or older who were pregnant at anytime from August through mid-November (approximately by November 16) in the United States. The objective of this internet panel survey was to estimate influenza vaccination coverage levels among a nationally representative sample of 1,500 women selected from an internet panel. Because there is no national sampling frame of pregnant women, the sample had to be selected by first screening a sample of households to identify those with at least one pregnant woman eligible for the survey. Given that the proportion of adult women who would be pregnant at any point in time is less than 3%, it would be extremely expensive and time-consuming to do a random-digit-dialing survey or a mail survey. Therefore, a sample of pregnant women was selected by screening of selected households from an existing national internet panel of households.

The internet panel used for this survey is a general population panel of approximately one million households.<sup>(8)</sup> It is a dynamic panel with new panelists recruited continually and panelists removed continually. In addition to the core active panel, additional panels were also used to reach the desired sample size. When people are included in the panel, various demographic variables including age, sex, race/ethnicity, income, and zip code are collected. The selection procedure for choosing the screening sample utilized demographic and geographic information resulting in a sample that is reflective of the population from which it was selected. The screening questions to identify eligible women were developed by Abt Associates in conjunction with CDC.

The eligible population of pregnant women on this panel excludes those without internet access. There could be disproportional representation among some subgroups including race/ethnicity and age. In order to make the estimates from this sample generalizable to the U.S. population of pregnant women, a post-stratification weight for each responding pregnant woman was developed through raking.

Due to the nature of the panel survey, a survey response rate cannot be calculated. Of the panelists who took the screen, 1,506 were eligible to take the survey. Of those eligible, 1,501 pregnant women began the survey; 105 women ultimately did not finish the survey, resulting in 1,396 completed surveys of eligible women. The survey completion rate was 92.7%.

## References

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